Letters to the Editor

The Board of Editors will not hold itself responsible for opinions expressed in the letters, published in this section. The notes containing reports of new work communicated for this section should not contain many figures and should not exceed 500 words in length. The contributions must reach the Assistant Editor not later than the 15th of the second month preceding that of the issue in which the Letter is to appear. No proof will be sent to the authors.

THE ULTRAVIOLET ABSORPTION SPECTRUM OF PARA FLUOROCHLOROBENZENE.

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In continuation of the work on the ortho- and meta-fluorochlorobenzenes (author, 1955, 1956), the ultraviolet absorption spectrum of para-fluorochlorobenzene in the vapour was studied. There is no previous report on the ultraviolet absorption of this compound. The spectrum in the present investigations was photographed with path lengths of 25, 50 and 75 cms. and at different temperatures ranging from −80°C to about +100°C.

Two regions of absorption were observed : (1) a continuous one below 2150A and (2) a discrete one in the region 2940-2375A. These two regions merge together at higher vapour pressures. About 275 bands were measured in this discrete region. This system could be explained as due to the allowed electronic transition A_1-B_1. In accordance with this, a strong 0,0 band and overtones and combinations of many totally symmetrical vibrations were observed. The strong band at 36276 cm^{-1} was chosen as the 0,0 band. Most of the bands were interpreted in terms of 5 upper state and 5 ground state frequencies. These, together with other data, are presented in the following table. On the red side of each of the strong bands, satellite bands were observed with frequency separations of 33 and 90 cm^{-1}, the former being more pronounced. The absorption spectrum

obtained with a path length of 50 cm and at −10°C is reproduced in the adjoining figure 1.

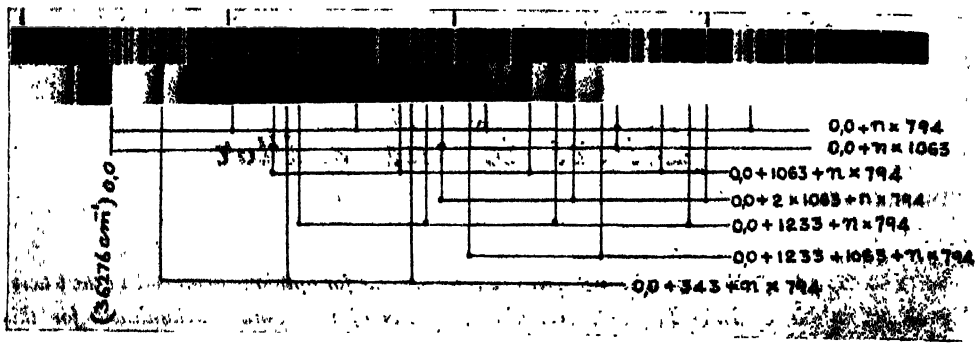

Fig. 1. Ultraviolet absorption spectrum of *p*-fluorochlorobenzene.

A detailed discussion of the analysis will be published shortly.

Ground and excited state frequencies of p-$F.C_6H_4.Cl$.

Raman data (Kohlrausch, 1947)			U.V. absorption data		Tentative assignment
$\Delta\nu$	Int	*ρ	Ground state	Excited state	
379	st	.42	370	343 (m)	one of the ε^+_g components of C_6H_6
634	ms	.64	637	563 (w)	C–Cl stretch
817	vs	.19	815	794 (st)	C–C vibration
1094	st	.22	1090	1063 (ms)	C–C vibration
1227	mw	.38	1239	1233 (m)	C–F stretch

*Determined in the present investigations.

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